Reiter's syndrome and reactive arthritis in health care workers after vaccination

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See editorial by Delamothe

Health care workers who are in direct contact with blood are at increased risk of acquiring hepatitis B infection. The Department of Health recommends vaccination against hepatitis B for people at special risk.[1] We report a case of Reiter's syndrome after the second dose of Engerix B vaccine and a case of reactive arthritis after the first, both occurring in health care workers.

Case reports

CASE 1

A 29 year old health care worker developed polyarthritis four weeks after the second injection in a course of hepatitis B immunisation. Initially, he had developed pain, stiffness, and swelling in his left wrist and his knees and had been unable to walk. He had also developed bilateral conjuctivitis and dysuria. There had been no prodromal illness.

On examination he was not feverish, and he had bilaterial conjunctivitis with scanty purulent discharge. His right knee was hot, swollen, and tender but no effusion was detectable. He had a normal full blood count with a raised plasma viscosity (1·90, normal range 1·5-1·72). Liver enzyme activities were normal, and screening for rheumatoid factor and autoantibodies gave negative results. Urine cultures were sterile; a urethral swab was not taken. He improved with bed rest and splinting and was discharged from hospital taking indomethacin. Over the next six months he had intermittent dysuria but urine cultures remained sterile. He subsequently developed persistent swelling in his wrists and knees. Enteric coated prednisolone 5 mg daily was added, and his symptoms improved gradually over the next four months, when all drugs were withdrawn. He was observed for a further four months with no recurrence in his symptoms and remained well during the following year.

CASE 2

A 41 year old female nurse developed migratory polyarthritis two weeks after receiving a single dose of hepatitis B vaccine. On examination her right wrist and her knees were tender and swollen and she had only restricted, painful movement in her left shoulder. She also had asymmetrical swelling in the small joints of her hands and feet. She had no history of recent infections and no relevant medical or family history. She had a normal full blood count with a raised plasma viscosity (2·12). Liver enzyme activities were normal and urine cultures were sterile. Tests for rheumatoid factor and autoantibodies gave negative results.

Her symptoms were initially controlled with naproxen 500 mg twice daily, but after two months the joint pain and stiffness increased and she started taking sulphasalazine 500 mg a day, which was increased to 1 g twice daily. Hand radiographs never showed erosive changes. Her symptoms settled after five months, and drug treatment was discontinued. She was observed for a further six months with no recurrence.

Comment

Although reactive arthritis after hepatitis B vaccination has been reported,[2-4] to our knowledge Reiter's syndrome has not been described. Engerix B vaccine was first marketed in 1987, and over 5·2 million doses have been distributed across the United Kingdom and Republic of Ireland. The Committee on Safety of Medicines in the United Kingdom has received many reports of arthralgia and a small number of cases of reactive arthritis or exacerbation of pre-existing arthritis after vaccination (personal communication). Joint symptoms usually develop within a few weeks of the first or subsequent vaccination and commonly resolve in a further few weeks. In both our patients, however, disabling joint symptoms lasted for almost six months. The pathogenesis of reactive arthritis is not known, but the presence of HLA-B27 predicts a prolonged and more severe disease.[5] Circulating immune complexes are also thought to have a role.[3] We did not test our patients for circulating immune complexes, complement activation, or HLA-B27 antigen.

SmithKline Beecham Pharmaceuticals, the manufacturer of Engerix B vaccine, has received 11 reports of rechallenge vaccination in people who developed joint symptoms after receiving Engerix B; six of them developed polyarthralgia again, and in most of them rechallenge led to more severe symptoms (personal communication). We did not revaccinate our patients because of the duration of their disabling symptoms. The long term prognosis in people developing disabling arthritis after hepatitis B vaccination is not documented.

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Immunity to hepatitis B among health care workers performing exposure prone procedures

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All health care staff who have contact with blood or bloodstained body fluids should be vaccinated against hepatitis B.[1] More recent recommendations are that all surgeons should be immunised against hepatitis B by mid-1994 and all staff involved in exposure prone procedures by mid-1995,[2] exposure prone procedures being those in which injury to the employee could result in exposure of a patient's open tissues to the employee's blood. We examined the immunity of staff of two health authorities and estimated the risk of a health care worker who performs exposure prone procedures being an infectious carrier of hepatitis B.

Subjects, methods, and results

Dudley Health Authority and Hammersmith and Queen Charlotte's Special Health Authority separately introduced policies before and in keeping with the government's guidelines[2] in 1993 and 1991 respec-